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§ 45. Two New Species of Fungi.

By CHAS. H. PECK.

An interesting, and, so far as I have been able to ascertain, an undescribed fungus was recently sent me from Illinois. It inhabits oak leaves and occurs in two forms, one conidial, the other ascigerous. The conidial form grows in minute white tufts, having a somewhat radiate or stellate appearance, especially when viewed through a magnifying glass. These tufts occur on the lower surface of the leaf and are generally sufficiently numerous to cause the leaf to appear as if it had been sprinkled on that surface with flour. The upper surface is obscurely mottled with minute pale or yellowish spots, which are placed opposite the tufts beneath. The hyphae or flocci are compound and are composed of several somewhat obconic masses of obovate or short-clavate cells, the masses being placed one above another in a proliferous manner, and together forming a sort of short, thick, submoniliform filament or pagoda-like structure. The conidia are also in masses or tufts, which are nearly elliptical in outline, and arranged in verticels around the flocci, they being attached to the upper or thicker exterior part of the component cells. In each tuft there are usually seven, though sometimes but six, oblong or subcylindrical, slightly curved, colorless conidia, compactly arranged in a circle and forming a kind of cylinder or palisade around a single central one. Thus each tuft contains in all seven or eight conidia. This form of the fungus develops a little before the ascigerous form. In the specimens before me, some of the leaves have only the conidial form on them, others have both forms intermingled. In the latter, the ascigerous form appears frequently to have developed on the very spot previously occupied by the conidial form. The ascigerous form consists of numerous black dots or cushions scarcely broader than the conidial tufts. Both surfaces of the leaf are more or less tinged with brown in the places where these fungus dots are the most numerous. A thin, flat, pale, soft or waxy stratum or receptacle first makes its appearance. This produces numerous globose asci, which are at first pale and contain eight oblong triseptate spores, one or more of the cells of which are divided by short longitudinal septa, so that the spores might be called muriform. They are at first pale or colorless, but soon become very dark-colored, and give the black hue to the fungus dots. The asci develop in the stroma-like receptacle, but, when mature, they appear to lie upon or near the surface, and almost cover the receptacle and conceal it from view. In a few instances they become slightly longer than broad and take a somewhat ovate shape, but usually they are globose even when mature.

I know of no genus to which this fungus can properly be referred, and am therefore obliged to institute one for it.

ASCOMYCETELLA.

Parasitic; receptacle thin, flattened, soft or waxy when moist, superficial, separable; asci globose or subglobose, eight-spored; spores colored when mature; paraphyses none.

This is evidently a genus belonging to the Discomycetes, but apparently is to be classed among the lowest forms of that division. Its parasitic character and almost naked superficial asci indicate a relationship with the genus *Ascomyces*, while the presence of a receptacle, though it is but a slight one, connects it with more highly developed Discomycetes.

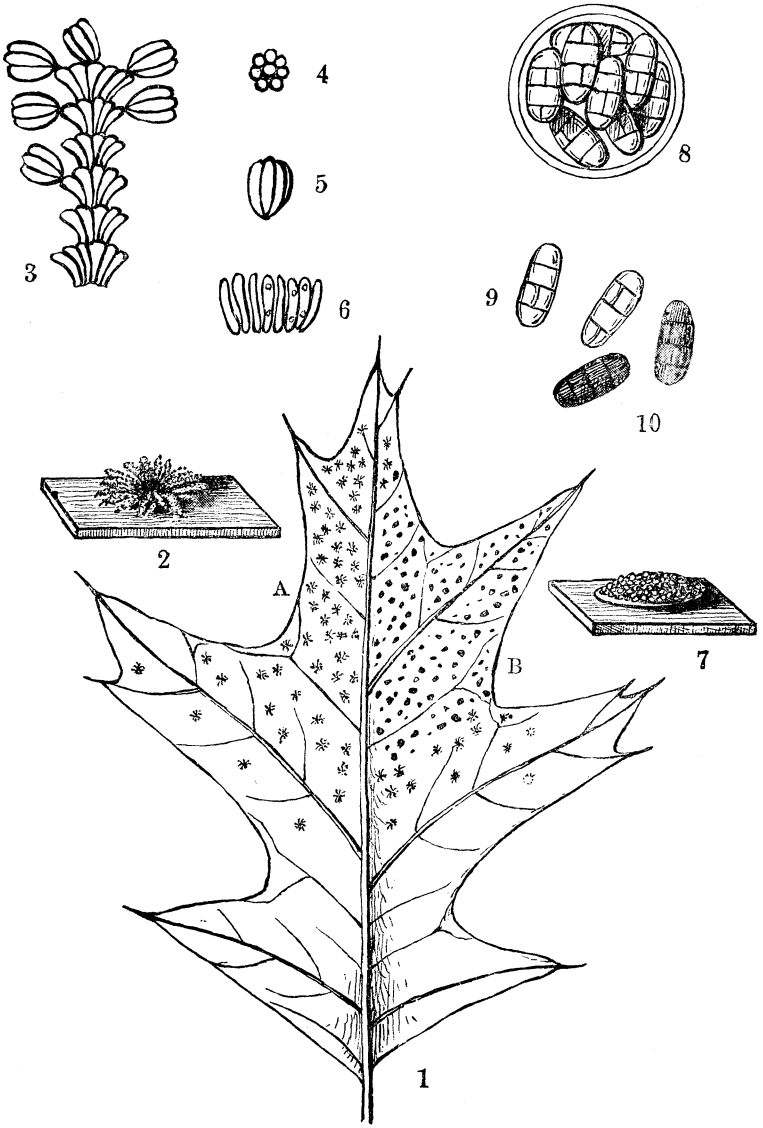
ASCOMYCETELLA QUERCINA: *Conidial form.*—Hyphae tufted, colorless, compound, composed of superimposed, somewhat obconic masses of obovate cells placed side by side and bearing on the upper and outer margin of the masses verticels of conidia; conidia oblong or subcylindrical, slightly curved, colorless, .0005—.0006 of an inch long, .00016—.0002 of an inch broad, produced in subelliptical tufts or masses, .0005—.0006 of an inch long and about .0005 of an inch broad, each tuft composed of seven, occasionally six conidia, compactly placed side by side in a circle, and forming a cylinder around a central one.

Ascigerous form.—Receptacle thin, minute, suborbicular, .01—.02 of an inch in diameter, whitish or pallid; asci numerous, globose, rarely obovate, .0012—.0016 of an inch broad; spores irregularly crowded, oblong, obtuse at each end, .0008—.0009 of an inch long, .0004—.0005 of an inch broad, triseptate, some of the cells divided by short longitudinal septa, at first pale or colorless, colored when mature.

Living leaves of black oak, *Quercus tinctoria*, Union County, Illinois. September and October. F. S. Earle.

The conidial form of the species bears some resemblance externally to *Microstroma quercina*, but is very different in structure. Mr. Earle informs me that in one instance nearly all the leaves on a tree were affected by the fungus, while in another, only a few leaves. He invariably finds the two forms associated together. He does not think that the tree suffers any serious injury from the attacks of the fungus. It was first observed by him in 1879.

There has been sent to me also, from Maryland, a very remarkable species of *Polyporus*. The substance of the fresh plant, when cut, exudes a milky juice similar to that which, under similar circumstances, oozes from the wounds of *Lactarii*. The spores of this *Polyporus* are also similar in size, shape and sculpture to the spores of *Lactarii*. Inasmuch as the most obvious character of the genus *Lactarius* is the milky juice of the species, some may regard this character in a *Polyporus* as sufficient to justify the formation of a new genus. To me it seems unnecessary to found a new genus on a single character of this kind so long as it is known to exist in but a single species. When its value shall be enhanced by its known presence in other species, it may be well to consider the question. So far as can be ascertained from the published characters of *Polyporus Berkeleii*, Fr., our plant must resemble it externally, but no mention is made of a milky juice in connection with that species; and, as such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a noticeable character would scarcely have been overlooked or omitted from the description, had it existed, I deem our plant worthy of specific distinction; and, partly from the dried specimens, but more from full notes and colored sketches by Miss Banning, who discovered and communicated the specimens, I have drawn up the following description:

POLYPORUS (MERISMA) LACTIFLUUS.—Pilei growing from a common tuberiform base, variously lobed, confluent or imbricated, sometimes imperfectly infundibuliform, six to ten inches broad, subtomentose or pubescent, whitish, marked with broad ferruginous or subochraceous zones, rough with slight radiating ridges, the margin thick, obtuse, sometimes flexuous; flesh white, firm, hard when dry, and exuding freely a milky juice where cut when fresh; pores medium size, unequal, irregular, often angular or flexuous, decurrent, white, at first short with thick dissepiments, then longer with thin but entire dissepiments; spores globose, rough, .0003—.00035 of an inch in diameter. Old stumps. Near Baltimore, Md. M. E. Banning.

EXPLANATION OF THE PLATE.—*Ascomycetella quercina, Pk.*—Fig. 1. Leaf of black oak bearing the fungus. A. The conidial form of the fungus. B. The ascigerous form of the fungus. Fig. 2. A tuft of the conidial form magnified. Fig. 3. A stem with six of its tufts of conidia still attached, x 400. Fig. 4. Vertical view of a tuft of conidia, x 400. Fig. 5. Side view of a tuft of conidia, x 400. Fig. 6. A tuft of conidia pressed apart, showing the separated conidia, x 400. Fig. 7. A cluster of asci and their receptacle, magnified. Fig. 8. A single ascus containing immature spores, x 400. Fig. 9. Two free immature spores, x 400. Fig. 10. Two free mature spores, x 400.

§ 46. Some New Species of North American Fungi.*

By J. B. ELLIS and H. W. HARKNESS, M.D.

SPHAERONEMA CAPILLARE, E. & H.—Perithecia capillary, black, 1″ high, slightly enlarged at the base and also at the apex; terminal globule pale; stylospores cylindric, obtuse, more or less bent or curved, with several transparent nuclei, .001′—.0015′x.0015′—.002.′

On bark of chestnut logs, Bethlehem, Pa., October.

SPORIDESMIUM RAUII, E. & H.—Tufts suborbicular, scattered or subconfluent, salmon-colored, minute; conidia obovate, composed of many compacted, partly transparent cells, with a large hyaline vescicle at the base, about .0015′ long, with the basal cell, and .0007′—.0008′ wide. Differs from *S. moriforme*, Pk., only in color.

On bark of an old grape-vine, Bethlehem, Pa., November, 1880. E. A. Rau.

MYTILINIDION CALIFORNICUM, E. & H.—Perithecia conchiform, .035′ long, faintly striate; lips closely compressed at first, at length partially open; asci clavato-cylindric, .0017′x.0003′; sporidia biseriate, oblong-fusiform, yellowish, triseptate, sometimes slightly constricted at the septum, .0005′—.0006′ long.

On foliage of *Sequoia gigantea* ("Big Trees"), California. H. W. Harkness.

*Continued from page 28.